Assessing Children's Exposures to the Wood Preservative CCA (Chromated Copper Arsenate) on Treated Playsets and Decks

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Concerns have been raised regarding the safety of young children contacting arsenic and chromium residues while playing on and around chromated copper arsenate (CCA)-treated wood playground structures and decks. Although CCA registrants voluntarily canceled treated wood for residential use effective December 31, 2003, the potential for exposure from existing treated wood structures and surrounding soil still poses child health hazard concerns.

The EPA's Office of Research and Development (ORD), National Exposure Research Laboratory (NERL) collaborated closely with the EPA's Office of Prevention, Pesticides, and Toxic Substances (OPPTS), Office of Pesticide Programs (OPP) to conduct a probabilistic exposure assessment for children in the United States who frequently contact treated wood playsets and decks in public and residential locations. NERL's probabilistic Stochastic Human Exposure and Dose Simulation model for wood preservatives (SHEDS-Wood) was developed and applied to estimate children's absorbed dose of the arsenic and hexavalent chromium components of CCA. ORD's exposure assessment was used by OPP to help determine the potential short-term, intermediate-term, and lifetime cancer risks for the population of interest.

Skin contact with and ingestion of arsenic and chromium in soil and wood residues were considered for a population of children simulated by SHEDS-Wood using EPA's Consolidated Human Activity Database (CHAD). Model analyses were conducted to assess the range and uncertainty in population estimates, key model inputs, and the impact of various potential mitigation strategies, such as the use of sealants and hand washing after play events. Draft reports for the exposure and risk assessments can be found on the EPA Web site for the December 3-5, 2003, Scientific Advisory Panel meeting: www.epa.gov/scipoly/sap.

OPP's Reregistration Eligibility Decision (RED) document for Chromated Arsenicals will include a comprehensive assessment of the potential impacts of CCA on human health and the environment. It is anticipated that the outcome of OPP/ORD human health risk assessment will be pivotal in the risk management and reregistration eligibility decisions for CCA and in advising the public how to minimize health risks from existing treated wood structures.